

APPLICATION SOLUTIONS BROCHURE

# You make grow lights for horticulture.

We'll make your business grow with LEDs  
optimized for horticulture, enabling you to  
design your ideal solution.



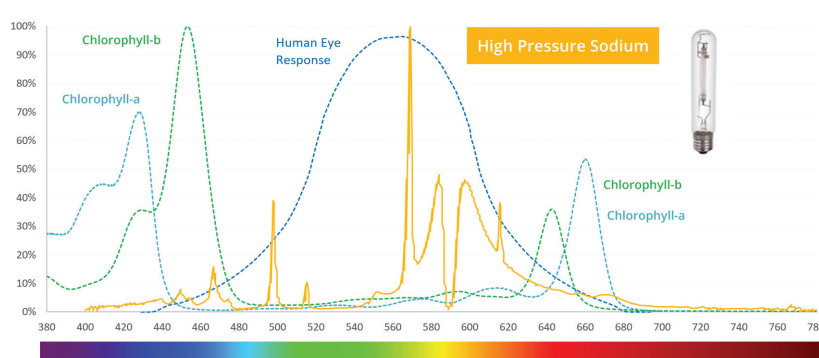
## “LED horticultural luminaires are forecast to experience astronomical growth over the next 5 years”<sup>1</sup>

Industry experts predict that LEDs for horticulture applications will experience dramatic growth, with fixture sales expected to increase at an astounding 30% CAGR during 2018-2022<sup>2</sup>.

Fueling this expansion is the fact that the economics of LEDs now make sound financial sense for growers, and will increasingly become the only practical solution for large-scale deployments.

### Conventional lamps were designed for the human eye response, not for plants

HPS lamps miss the chlorophyll absorption peaks, the wavelengths that drive photosynthesis



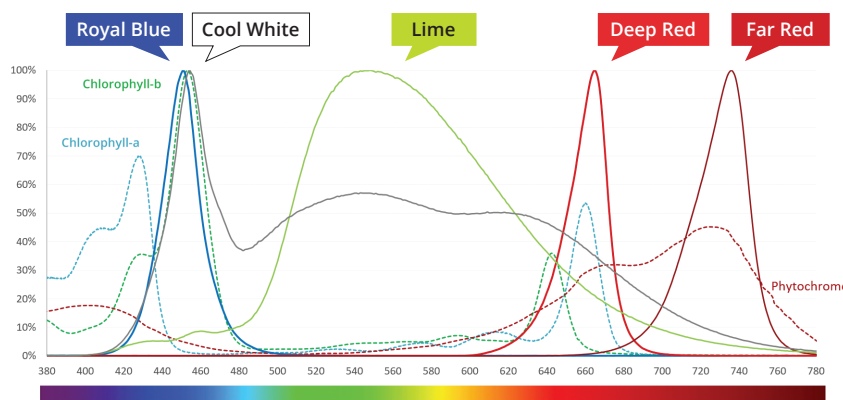
**Lumen**  
For illumination used by humans

**PPF**  
Photosynthetic Photon Flux is used by plants for growth and vital activities

**PAR**  
Photosynthetically Active Radiation Spectra from 400nm to 700nm

## LUXEON SunPlus LEDs are optimized for horticulture

Engineered to target the right wavelengths and binned to maximize growth in the most efficient way



LUXEON SunPlus delivers PPF in the key wavelengths for plants

**Chlorophyll** (for photosynthesis)  
Royal Blue - Deep Red

**Phytochrome** (for photoperiodism)  
Far Red

**Full Spectrum** (for accessory pigments)  
Cool White - Lime

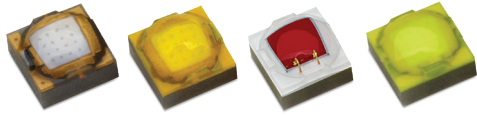
<sup>1</sup>Navigant Research 2015

<sup>2</sup>LEDinside, July 2018

# LUXEON SunPlus Series LEDs

Delivering precise light to improve crop yield

## LUXEON SunPlus 20 Line



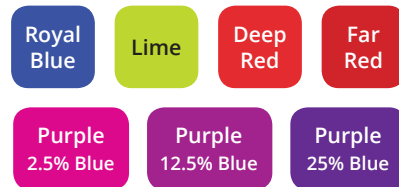
- Targets the key wavelengths where plants absorb photons (450nm & 660nm)
- High PPF to maximize the photon output of the system
- Optical design optimal for directional applications



## LUXEON SunPlus 35 Line



- Unique Purple LED enabling a fixed spectra for quick designs
- Perfect uniformity at short distances
- Photon output per LED enables vertical farming



## LUXEON SunPlus CoB Line



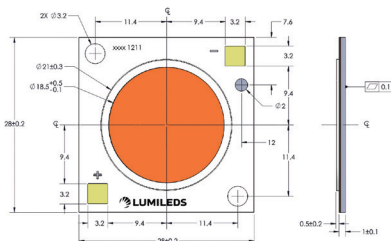
### Best for Directional High Lumen PPF

- Fixed spectra for quick designs
- Optimal design for directional applications
- 200W single emitter solution in 32mm LES

### Available Spectra

Purple  
12.5% Blue

- Binned in PPF
- Package sizes
  - 1208/15mm LES
  - 1211/19mm LES
  - 1825/32mm LES



- Typical viewing angle: 115°

## LUXEON SunPlus Matrix Platform

### (Fully Assembled Light Engine)



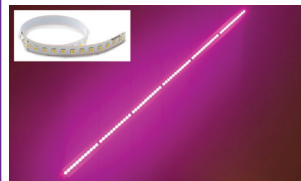
### Best for Ease of Design and Fast Time to Market

- Fully assembled light engine on a flexible or rigid substrate, enabling leading luminaire solutions and accelerating time to market
- Turnkey solution with full flexibility to fit existing fixtures
- Oberon Intelligent assembly for consistent growth performance. Can also be provided as a tailored solution per customer's spectral requirement

LUXEON XF-SunPlus  
35 (P)

LUXEON XR-SunPlus  
35 (P+L)

Perfect uniformity enables very short distances



# Why LUXEON SunPlus LEDs?

## Higher Yield:

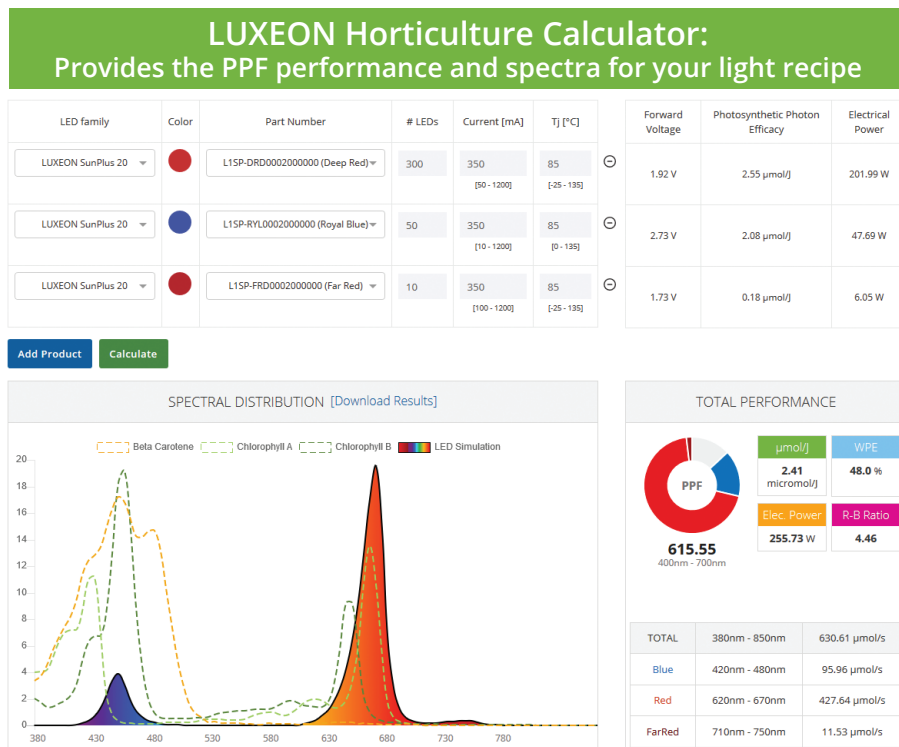
- Optimized LEDs that perfectly match the chlorophyll absorption peaks to drive intense photosynthesis and obtain greater yield, increased crop quality and consistent growth

## Lower Cost of Ownership:

- High efficiency to reduce energy consumption, water usage and A/C costs
- Leading PPF maintenance and reliability reduces or eliminates fixture/lamp replacements

## Better for Growers:

- Higher quality of light and reduced heat for a better working environment
- LEDs do not break like lamps, saving the greenhouse from poisonous chemicals or broken glass



## About Lumileds

Companies developing automotive, mobile, IoT and illumination lighting applications need a partner who can collaborate with them to push the boundaries of light. With over 100 years of inventions and industry firsts, Lumileds is a global lighting solutions company that helps customers around the world deliver differentiated solutions to gain and maintain a competitive edge. As the inventor of Xenon technology, a pioneer in halogen lighting and the leader in high performance LEDs, Lumileds builds innovation, quality and reliability into its technology, products and every customer engagement. Together with its customers, Lumileds is making the world better, safer, more beautiful—with light.

To learn more about our lighting solutions, visit [lumileds.com](http://lumileds.com).



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